

THE ELECTRICAL WORLD

TRY THIS.

An Interesting Electric Blue Light Experiment.

Take a jump-spark coil and connect it up with a battery and start the vibrator. Then take one outlet wire, R, and connect to one side of a two-candle-power electric lamp and the other outlet wire, B, hold in one hand and press the other hand on globe at point A. A bright, blue light will come from the wires in the lamp to the surface of the globe where the fingers touch. But, says Popular Mechanics, no shock will be perceptible.

Electricity in Spain.

The recent increase in the use of electricity in Spain has been so rapid that an official report states that to-day very few localities exist where the electric light is not employed. This is particularly true of places situated near swiftly running streams. The consumption of electric lamps, even in the smallest villages, is described as being enormous. Everywhere electric motors are found taking the place of steam power. Yet the construction of electric apparatus in Spain has not kept step with the growth in its employment, 80 per cent. of the dynamos and motors being imported from Germany. Most of the remainder come from France and Switzerland.

Some curbstone brokers in New York are using wireless receivers instead of megaphones to get market quotations.

Giraffes and elephants are said to play havoc with telephone lines in Africa.

MACHINE DISPLACES MEN.

Electric-Mechanical Bookkeeper Does Away with Clerks.

One of the leading Chicago banks, which employs 600 clerks, expects to be able to greatly reduce its force by the use of a new mechanical calculator. This machine, says Popular Mechanics, does much more than the adding machines already in general use. It adds, subtracts, divides and multiplies and calculates in both vertical and horizontal lines simultaneously. It is operated by keys and resembles a typewriter. It is run by a small electric motor and prints its records. It is the invention of a bank bookkeeper, who has spent 12 years in perfecting it. He claims it will save one-half the time now spent in keeping books.

Development of Electric Road.

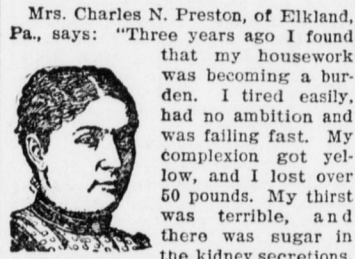
The electric railway had many "inventors"—persons who by various improvements brought the system to its present usefulness. Thomas Davenport, a blacksmith of Brandon, Vt., is credited with having first suggested the electric railway, although an Italian priest, Abbe Salvatore Del Negro, professor of natural history at the University of Padua, is reputed to have designed an electric toy traction machine of the reciprocating type in 1830. Davenport ran a toy motor mounted on wheels on a small circular railway in 1834, exhibiting this a year later at Springfield and Boston, Mass. About half a century passed, however, before the electric railway was made practical for present uses.

Sodium for Electric Uses.

Sodium is an excellent conductor of electricity, and in view of the increasing price of copper and the growing demand for that metal not only for electric installations, but for many other purposes, the idea has been broached that sodium should be tried as a material for electric cables. Experiments looking to this end have lately been made by Mr. A. G. Bett. He filled an iron tube 130 feet in length with melted sodium. The core thus formed had a cross-section of an inch and a half. A current of 500 amperes was readily transmitted through it. Mr. Bett thinks that sodium conductors constructed upon this plan may be made cheaper than conductors of copper.

WORN TO A SKELETON.

A Wonderful Restoration Caused a Sensation in a Pennsylvania Town.



Mrs. Charles N. Preston, of Elkland, Pa., says: "Three years ago I found that my housework was becoming a burden. I tired easily, had no ambition and was failing fast. My complexion got yellow, and I lost over 50 pounds. My thirst was terrible, and there was sugar in the kidney secretions. My doctor kept me on a strict diet, but as his medicine was not helping me, I began using Doan's Kidney Pills. They helped me at once, and soon all traces of sugar disappeared. I have regained my former weight and am perfectly well."

'T WAS IN 'TATER TIME.

One Thing, at Least, the Mother Was Positive About.

The late Senator Platt of Connecticut enjoyed funny stories and could tell a good many himself. Notwithstanding his long public life, he always remembered a yarn that he carried from his school days. One year when the district schools opened in his town one of the teachers, in making a record of the ages of her pupils, as required by law, found that one little girl, who came from a family not noted for being especially bright, was unable to say when her birthday came.

So in order to complete her records, the teacher walked two miles to see the girl's mother one afternoon after school. Asked if she could remember just when her daughter was born, the woman thought for some little time, and then with a sort of puzzled look, said: "Well, the gal was born in 'tater time, that's sure, but I can't member whether they was a plantin' on 'em or a-diggin' on 'em."

Tom Ochiltree's Moon.

After Tom Ochiltree, that able congress raconteur and laugh generator for the afflicted rich, settled in New York as the amuser of the John W. Mackay family, he effervesced in a thousand different directions, and was as good in some ways as Sam Ward. One night he escorted John Mackay's friend, the Count de Biscont, down to the Battery to show the sight of New York. The moon was grand, and the count went into raptures as "her maiden reflection rippled over the pearly waters." He cried: "Eet iss grand! Eet iss grand! Dair iss no such moon in all Italy!" "Count," said Ochiltree, solemnly, as befitted the occasion, "you just ought to see the moon in Texas!"

A Pardonable Fault.

Dr. Edward Everett Hale, discussing a rather finicky attack that had been made on certain recent statements, smiled and said: "But who or what is blameless? It is like the case of the Scottish hen. An old Scottish woman wished to sell a hen to a neighbor. "But tell me," the neighbor said, "is she a'thegither a guid bird? Has she got nae fauts, nae fauts at all?" "Awel, Margot," the other old woman admitted, "she has got one fault. She will lay on the Lord's day."

Gunner—So you think the DeBlowers are faking about their extended European tour?

Guy—I should say so. They said there were so many Americans in Venice that many had to walk in the middle of the street.

Gunner—Well?

FAMILY FOOD.

Crisp, Toothsome and Requires No Cooking.

A little boy down in N. C. asked his mother to write an account of how Grape-Nuts food had helped their family.

She says Grape-Nuts was first brought to her attention on a visit to Charlotte, where she visited the Mayor of that city who was using the food by the advice of his physician. She says: "They derive so much good from it that they never pass a day without using it. While I was there I used the Food regularly. I gained about 15 pounds and felt so well that when I returned home I began using Grape-Nuts in our family regularly.

"My little 18 months old baby shortly after being weaned was very ill with dyspepsia and teething. She was sick nine weeks and we tried everything. She became so emaciated that it was painful to handle her and we thought we were going to lose her. One day a happy tie lit urged me to try Grape-Nuts soaked in a little warm milk.

"Well, it worked like a charm and she began taking it regularly and improvement set in at once. She is now getting well and round and fat as fast as possible on Grape-Nuts.

IN THE SUPERLATIVE DEGREE.

Little Son's Explanation Seemed to Cover the Case.

Little son, aged seven, whose training has been of the most painstaking and conscientious, rather took away his mother's breath in describing the dog's game of ball. He ended with: "And, mother, Topsy caught the ball in her mouth, and then just ran like h—!" "Like what?" cried the startled mother.

"No, I don't believe I do. Just how is that, dear?" she asked faintly.

CASE OF ECZEMA IN SOUTH.

Suffered Three Years—Hands and Eye Most Affected—Now Well and is Grateful to Cuticura.

"My wife was taken badly with eczema for three years, and she employed a doctor with no effect at all until she employed Cuticura Soap and Ointment. One of her hands and her left eye were badly affected, and when she would stop using Cuticura Soap and Ointment the eczema came back, but very slightly, but it did her a sight of good. Then we used the entire set of Cuticura Remedies and my wife is entirely recovered. She thanks Cuticura very much and will recommend it highly in our locality and in every nook and corner of our parish. I. M. Robert, Hydropolis, La., Jan. 5 and Sept. 1, 1906."

A Hopeless Case.

"Yes," said the business man, "I have given up trying to collect that little bill from Bilkins. You see, he is a big, muscular fellow, and he used to throw my collectors out."

"Then why didn't you employ a woman collector?" inquired a writer in Spare Moments. "He couldn't do that to a woman."

NEW HOMES IN THE WEST.

Send for free copy of pamphlet containing synopsis of the United States homestead laws and information how to secure a quarter section of splendid farming or grazing land free along the new railway lines of the Chicago & North-Western Ry. in South Dakota, Wyoming and other states. Special excursion rates to homeseekers. Full information on request to W. B. Kniskern, Passenger Traffic Manager, C. & N. W. Ry., Chicago.

Statue Finally Completed.

When Alfred Stevens designed the noble monument to the duke of Wellington in St. Paul's cathedral, London, he intended that his work should be crowned by an equestrian statue. But Stevens died before his design was carried out. Now, 32 years after his death, the equestrian statue has been completed and before long will be placed in position.

How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure. F. J. CHENEY & CO., Toledo, O. We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligations made by him.

Oldest Congregational Church.

The Pilgrim Congregational church, near London, founded in 1616, is the oldest of the denomination in the empire, and it was from it that the London contingent of the men of the Mayflower was recruited.

Shake Into Your Shoes.

Allen's Foot-Ease. It cures painful, swollen, smarting, sweating feet. Makes new shoes easy. Sold by all Druggists and Shoe Stores. Don't accept any substitute. Sample FREE. Address A. S. Olmsted, Le Roy, N. Y.

Natural Fly-Paper.

The pinguicula is a plant which is a natural fly-paper. Its leaves are constantly covered with a sticky substance that traps all insects alighting thereon.

No Headache in the Morning.

Krause's Headache Capsules for over-indulgence in food or drink. Druggists, 25c. Norman Lichty Mfg. Co., Des Moines, Ia.

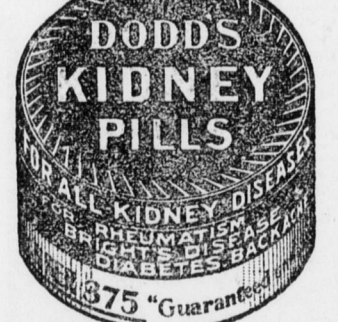
Sends Emigrants to Canada.

The Salvation Army in England is sending emigrants to Canada in batches of 600 monthly.

Mrs. Winslow's Soothing Syrup.

For children teething, softens the gums, reduces inflammation, allays pain, cures wind colic. 25c a bottle.

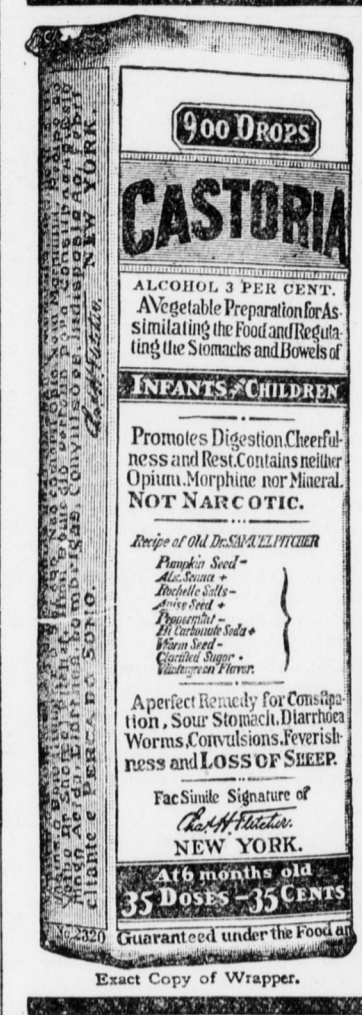
Live pure, speak true, right wrong—else, wherefore born?—Tennyson.



PATENTS Watson E. Coleman, Patent Attorney, Washington, D. C. Advice free. Terms low. Highest ref.

Sapphire Mining Revived. Sapphire mining in Kashmir is being revived by a new company, composed of Europeans of high standing and wealthy natives.

I don't think much of a man who is not wiser to-day than he was yesterday.—Abraham Lincoln.



CASTORIA For Infants and Children. The Kind You Have Always Bought Bears the Signature of Dr. J. C. Hathorn. In Use For Over Thirty Years CASTORIA THE CENTAUR COMPANY, NEW YORK CITY.

OPPORTUNITIES ALONG A NEW LINE

Today the great opportunities in farming, in cattle raising, in timber and in commercial lines are in the country and in the towns along the Pacific Coast extension of the

CHICAGO, MILWAUKEE & ST. PAUL RAILWAY

It is worth your while to investigate these openings. This can best be done by a personal visit. Such a trip is made inexpensive by the low rates via this railway to North Dakota, South Dakota, Montana, Idaho and Washington. If you are interested, write for information, asking specific questions. A letter and a descriptive book and map will be sent by return mail.

F. A. MILLER GENERAL PASSENGER AGENT CHICAGO



Do you want an engine? We have one you can afford to buy. We have been building nothing but engines for 25 years. We guarantee the Olds Engines will run properly. The price is right. The engine is reliable and simple. We treat you right. There is an agent near by to see everything is right and kept so.

We have a liberal proposition to make to you, besides furnishing you the best engine made. Let us tell you about it, because it will surely interest you. We can furnish you our Type A engine, set up on skids if desired, 3 to 8 h. p. ready to run when you get it—does not have to be set up—no piping to connect, no foundation to build—simply fill with gasoline (or distillate) throw on the switch, turn the wheel and it goes. Easy to start winter or summer. The cheapest of all engines for farm and stationary power. Has removable water jacket, all latest improvements, and has been adopted by the United States Government. Send for our catalog of 3 to 50 h. p. and be sure you take advantage of our proposition and save money.

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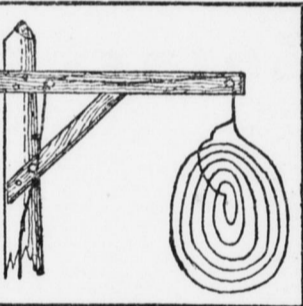
Northern Wisconsin

Material. Best of Markets. Similar soil in improved farms in Southern part of the State now sells for \$75 to \$150 per acre. Write for information to COMMISSIONER OF IMMIGRATION, MADISON, WISCONSIN

An Efficient Wireless Telegraph.

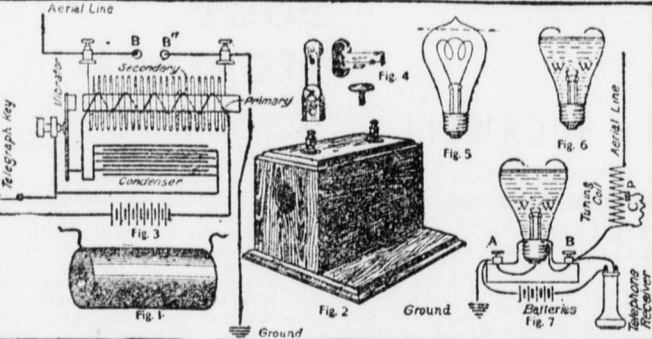
A simple but very efficient wireless telegraph may be constructed at slight cost from the following description by George W. Richardson:

The sending apparatus consists of nothing but an induction coil with a telegraph key inserted in the primary circuit, i. e., the battery circuit. This



The Aerial Wire on Pole.

apparatus can be purchased from any electrical supply house. The price of the coil depends upon its size, and upon the size depends the distance signals can be transmitted. If, however, one wishes to construct his own coil he can make and use, with slight changes, the jump-spark coil described in the June number of Popular Mechanics. This coil, being a one-inch



coil, will transmit nicely up to a distance of one mile; while a 12-inch coil made on the same plan will transmit 20 miles or even more under favorable conditions.

Change the coil described, as follows: Insert an ordinary telegraph key in the battery circuit, and attach two small pieces of wire with a brass ball on each, by inserting them in the binding-posts of the coil as shown at B, B inches. From these two terminal wires one is grounded to earth, while the other wire is sent aloft and is called the aerial line. This constitutes all there is to the sending apparatus.

Now for the receiving apparatus. In the earlier receiving instruments a coherer was used, consisting of a glass tube about one-eighth inch diameter, in which were two silver pistons separated by nickel and silver filings, in a partial vacuum. This receiver was difficult of adjustment and slow in transmission. An instrument much less complicated and inexpensive and which will work well can be made thus:

Take a five-candlepower lamp and break off the tip at the dotted line, as

shown in Fig. 5. This can be done by giving the glass tip or point a quick blow with a file or other thin edged piece of metal. Then with a blow-torch heat the broken edges until red hot and turn the edges in as seen in Fig. 6. Remove the carbon filament in a lamp and bend the two small platinum wires so they will point at each other as in Fig. 6, W W. Screw the lamp into an ordinary wall socket which will serve as a base as in Fig. 7. Make a solution of four parts of water to one part sulphuric acid, and fill the lamp about two-thirds full (Fig. 7). This will make an excellent receiver. It will be necessary to adjust the platinum points, W W, to suit the distance the message is to be worked. For a mile or less the points should be about one-sixteenth inch apart, and closer for longer distances.

The tuning coil is simply a variable choking coil, made of No. 14 insulated copper wire wound on an iron core, as shown in Fig. 7. After winding, carefully scrape the insulation from one side of the coil, in a straight line from top to bottom, the full length of the coil, uncovering just enough to allow a good contact for the sliding piece. The tuning is done by sliding the contact piece, which is made of light copper wire, along the convolutions of the tuning coil until you can hear the signals. The signals are

heard in a telephone receiver, which is shown connected in shunt across the binding-posts of the lamp holder with one or two cells of dry battery in circuit, Fig. 7.

The aerial line, No. 6 stranded, is run from binding-post B through the choking or tuning coil, and for best results should extend up 50 ft. in the air. To work a 20-mile distance the line should be 100 or 150 ft. above the ground. A good way is to erect a wooden pole on a house or barn and carry the aerial wire to the top and out to the end of a gaff or arm.

To the end of the aerial wire fasten a bunch of endless loops made of about No. 14 magnet wire (bare or insulated), attaching both ends to the leading or aerial wire. The aerial wire should not come nearer than 1 ft. at any point to any metal which is grounded.

Run a wire from the other binding-post, A, to the ground and be sure to make a good connection.

For simple experimental work on distances of a few hundred feet only, an ordinary automobile spark coil can be used in place of the more elaborate coil, Fig. 1 to 4.